

## **APPENDIX A:**

### **History of Exploration**

There have been 17 wells drilled in the study area since the 1930s. The earliest well was drilled by the California Company along the Middle Fork of Dupuyer Creek and was the obligation well for the Federal Unit. The well was drilled in 1938 to a total depth of 2,814 feet and then abandoned. Another two wells were drilled between 1940 and 1950, one in 1947 in Sec. 14, T.26 N., R. 9. W. by General Petroleum Corporation was the unit well for the Blackleaf Structure Unit. This well was plugged in 1948.

#### **First Discovery**

The earliest discovery of gas in the Blackleaf area was the Northern Natural Gas well in Sec. 13, T. 26 N., R. 9 W., completed in June 1958, with an initial potential of 6.3 MMCF per day. This well was shut-in after completion until 1973 when it was plugged and abandoned. In 1981 the well (the current 1-13) was reentered by Williams Exploration, recompleted and has been shut-in since that time. Another well was drilled in 1958 about a mile to the south of the Williams well. This was the Humble No. 1-13 in Sec. 19, T. 26 N., R. W., completed in 1959, with an initial potential of 969 MCF per day. In 1973 this well was also plugged and abandoned. There were six more wells drilled in this area from 1956 to 1962. After that period there were no intensive exploratory efforts until the late 70s and early 80s.

Since 1980 there have been nine wells drilled in the study area; also, the present Blackleaf Unit was formed the same year. There have been six wells drilled in the Blackleaf Unit, two of which were plugged and abandoned. The first Pamburn Unit was formed south of the Blackleaf Unit in 1981. The unit well was drilled by Wexpro in Sec. 21, T. 25 N., R. 8 W. in 1981, but was plugged and abandoned, then the unit was terminated. The second Pamburn Unit was formed in 1983, covering the same acreage as the original Pamburn Unit. The obligation well for this unit was drilled in 1984 by Celsius Energy in Sec. 27, T. 25 N., R. 8 W.. This well was also a dry hole and the unit was terminated after the well was plugged.

#### **Unitization**

The objective of unitization is to provide for unified development and operation of an entire geologic prospect so that drilling and production can proceed in the most efficient and economical manner under the administration of one operator. Unit agreements are approved under authority contained in the Mineral Leasing Act of 1920 as amended. Exploratory units, such as the Blackleaf Unit, normally embrace a prospective area which has been delineated on the basis of geological and/or geophysical inferences. At the present time, approval of units is delegated to the Montana State BLM Director. Approval of operations within the Blackleaf Unit is delegated to the Great Falls Resource Area Manager.